



Water Quality Report

Joint Base Pearl Harbor-Hickam Water System

(Waiawa, Aiea-Halawa & Red Hill Sources)

This report meets federal and state requirements for Consumer Confidence Reports. This report is updated annually and reflects monitoring data collected from Jan 1 - Dec 31, 2023.

The Navy is pleased to provide you with this year's annual Water Quality Report for the Joint Base Pearl Harbor-Hickam (JBPHH) Drinking Water System.

This pamphlet provides information about the water delivered to you during the 2023 calendar year. It gives information on where your water comes from, what it contains, and how it compares to established standards for safe drinking water.

Due to the November 20, 2021, release at Red Hill, all drinking water for JBPHH now comes from the Waiawa Shaft (see page 2).

For more information on the Red Hill Release, Response, and Restoration efforts, please see: <https://jbphh-safewaters.org/>

The Navy's goal is, and always has been, to provide you safe and dependable drinking water.

Water Provider

Naval Facilities Engineering Systems Command (NAVFAC) Hawaii operates the water system servicing your area. As the Navy water provider in the State of Hawaii (State), we primarily supply water to military installations and housing.

Drinking Water Standards

The Environmental Protection Agency (EPA) and State regulations require us to test your water for contaminants on a regular basis, making sure it is safe to drink, and to report our results accordingly.

To ensure that tap water is safe to drink, EPA regulations limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration does the same for bottled water.

In this latest compliance monitoring period, we conducted tests for over 70 contaminants that have potential for being found in your drinking water. Tables 1-1, 1-2, 1-3, 1-4, and 1-5 show the concentration levels of regulated contaminants found in your water. In all cases, the levels measured were below EPA and State requirements for safe drinking water.

We are continually working to protect your drinking water from contaminants. The State's Department of Health (DOH) completed the Source Water Assessment in 2004 which identifies the susceptibility of your water supply to contamination. The source water assessment is available for review by contacting NAVFAC Hawaii Public Affairs, at 808-471-7300.

Source of Water

Historically, your drinking water came from the Waimalu and Moanalua groundwater aquifer systems via three supply wells/shafts: Waiawa, Aiea-Halawa, and Red Hill. Groundwater is naturally filtered as it travels from the surface to the aquifers below ground. The water is pumped up from the aquifer, disinfected, fluoridated, and piped into the JBPHH drinking water distribution system.

The Red Hill and Aiea-Halawa shafts were taken offline on November 28, 2021, and December 3, 2021, respectively, due to the Red Hill Shaft Incident (see page 2). Since

December 3, 2021, drinking water for the JBPHH Water System has been supplied solely by the water from the Waiawa Shaft.

Possible Source of Contaminants

The sources of drinking water (both tap water and bottled water) include: rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals. It can also pick up other substances resulting from the presence of animals or human activity. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

Potential Contaminants

Contaminants that may be present in your source water include:

Microbial contaminants – such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants – such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides – which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants – including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radionuclide contaminants – which can be naturally-occurring or be the result of oil and gas production and mining activities.

Lead – If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Navy is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may request to have the Navy test your water. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at: www.epa.gov/safewater/lead

Navy Water Requirements

In accordance with Navy policy, chlorine and fluoride are added to your water supply after the water is pumped from the ground. The Navy's goal is to maintain concentrations of approximately 0.7 parts per million (ppm) for fluoride and 0.2 ppm for chlorine throughout the distribution system.

2021 Red Hill Shaft Incident

On November 20, 2021, a mixture of JP-5 (jet fuel) and water was released from a fire suppression drain line into the drinking water in the Red Hill Shaft. The Red Hill Shaft has been isolated and offline since November 28, 2021. On November 29, 2021, DOH issued a Health Advisory for the JBPHH Public Water System recommending, "All Navy water system users to avoid using the water for drinking, cooking, or oral hygiene. Navy water system users who detect a fuel odor from their water should avoid using the water for drinking, cooking, bathing, dishwashing, laundry, or oral hygiene."

As a result of the fuel release, the Navy, in cooperation with DOH, EPA, and the U.S. Army, has implemented a set of plans and corrective actions to ensure safe drinking water and restore/recover the aquifer and drinking water system. The plans include:

- **Red Hill Shaft Recovery and Monitoring Plan**
<https://www.cpf.navy.mil/Portals/52/Downloads/JBPHH-Water-Updates/2022-01-26-red-hill-shaft-recovery-and-monitoring-plan.pdf>
- **Drinking Water Distribution Recovery Plan**
<https://www.cpf.navy.mil/Portals/52/Drinking-Water-Distribution-System-Recovery-Plan.pdf>
- **Drinking Water Sampling Plan**
https://www.cpf.navy.mil/Portals/52/Downloads/JBPHH-Water-Updates/Drinking%20Water%20Sampling%20Plan%20Addendum_V6_010422_Final2.pdf?ver=LHgyhCw68Io4cd8FtQAUeA%3d%3d

The Drinking Water Distribution System Recovery Plan divided the JBPHH Water System and Aliamanu Military Reservation Water System into 19 zones and detailed standard operating procedures for the flushing and sampling of each of the zones during the recovery effort in 2022. High-volume flushing of the Navy drinking water distribution system (all water mains/laterals/buildings) with 3 to 5 volumes of clean water from the Waiawa Shaft was conducted to restore safe drinking water to all Navy Water System users. Other corrective measures, such as fixture replacement, were also implemented where appropriate.

On March 18, 2022, after verification of recovery efforts and a thorough review of sample results, the DOH amended the health advisory and declared the drinking water safe for all 19 zones. To ensure a continuous supply of safe drinking water, the Navy implemented its Long-Term Monitoring plan that spanned for 24 months until February 2024. All drinking water sampling results are compiled and published on our Safe Waters website (see link below) designed to provide the public access to the most recent data reports and updates to the ongoing efforts to maintain safe drinking water. Sampling results will also be included in future Water Quality Reports:

www.cpf.navy.mil/JBPHH-Water-Updates/

Tier 1 Public Notification Close Out

On March 23, 2023, the Navy officially closed out its Tier 1 Public Notification Rule Notice of Violation (NOV), issued on May 22, 2022, because of the 2021 Red Hill Shaft incident. In last year's Water Quality Report, the Navy was required to publish its failure to provide a Tier 1 Public Notification within 24-hours of national primary drinking water regulation violations and other situations as determined by the State as required by Hawaii Administrative Rules (HAR) 11-20-18(b)(1)(G).

The administrative notice is available at:

https://jbphh-safewaters.org/public/administrative_notice_noo_a_mended_june_30.pdf

This notice includes an explanation of the drinking water contamination, actions taken by the Navy to remediate the

situation and identifies the point of contact for more information.

Tier 3 Public Notification

Per Hawaii Administrative Rules (HAR) 11-20-18(d), a public water system must provide a Tier 3 public notice within one year of the issued violation for failing to test its drinking water system for total coliform bacteria following the notification from its consecutive water system of a total coliform positive sample result.

On July 25, 2023, total coliform bacteria was detected in a routine water sample, collected on July 24, 2023, from the Aliamanu Military Reservation (AMR) Water System (PWS 337), which receives water from the JBPHH water system. Under the HAR 11-20-50(c)(1)(ii)(D), the JBPHH was required to collect, within 24 hours of confirmation of the final total coliform positive sample results, at least one sample from the ground water source in use at the time when the total coliform positive sample was collected and could have potentially put 65,250 people at risk. However, JBPHH collected samples from the source on August 2, 2023, which the sample results were negative for total coliform bacteria. This water quality report rectifies the Notice of Ground Water Rule Monitoring Violation issued to the Navy on November 1, 2023.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether your drinking water meets health standards. During July 2023, we did not complete all required bacteriological monitoring for total coliform bacteria at the JBPHH water system. We therefore cannot be sure of the quality of the Joint Base Pearl Harbor-Hickam drinking water during that time.

What should I do?

There is nothing you need to do at this time. You do not need to boil your water or take other corrective actions. You may continue to drink the water. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

Steps We are Taking

To ensure safe drinking water, the Navy revisited and revised its Total Coliform Bacteria Standard Operating Procedures to include instances, such as the one in July 2023, and will conduct the required testing to ensure compliance with the Ground Water Rule and the Safe Drinking Water Act.

For Questions/Concerns and Additional Copies

For questions/concerns or, more information, please contact:
NAVFAC Hawaii Public Affairs Office (PAO)
Telephone: 808-471-7300
Email: NFHI_PAO_DL@us.navy.mil

For additional copies of this and other Navy water reports, visit:

- <https://cnrh.cnrc.navy.mil/Operations-and-Management/Environmental/Water-Quality-Information/>
- <https://pacific.navfac.navy.mil/Facilities-Engineering-Commands/NAVFAC-Hawaii/About-Us/Our-Services/Environmental/Water-Quality-Reports/>

Please share this information with all other people who drink this water, especially those who may not have received this notice.

Official Address

Naval Facilities Engineering Systems Command, Hawaii
400 Marshall Road,
JBPHH, HI 96860-3139

Printed June 2024

Water Quality Data Table

The following tables list contaminants that were detected during the latest compliance sampling period (Jan 1 – Dec 31, 2023) required by EPA and State regulations. The water samples were collected from either the source water or distribution system and analyzed by the State, BWS and/or the Navy. The presence of contaminants does not necessarily indicate that the water poses a health risk. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. You can obtain more information about contaminants and potential health effects by calling the EPA's Safe Drinking Water Hotline 1-800-426-4791 or the State's Department of Health at 808-586-4258.

Contaminants in the Navy's Source Water

Table 1-1

Contaminants (units)	MCL (Allowed)	MCLG (Goal)	Highest Level Detected	Range of Detection	Year of Sample	Typical Sources of Contaminants	Violation
Inorganic Contaminants							
Fluoride (ppm)	4	4	0.8	nd-0.8 ¹	2023	Erosion of natural deposits; Water additive which promotes strong teeth	No
Nitrate (ppm)	10	10	0.54	0.54	2023	Runoff from fertilizer use; Erosion of natural deposits	No
Unregulated Contaminants^{3,7}							
Lithium (ppb)	n/a	n/a	nd	nd	2023	Naturally occurring metal that may concentrate in brine waters	n/a
Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (PFAS)	n/a	n/a	nd	nd	2023	Synthetic chemical used in a wide range of consumer products and industrial applications	n/a

Contaminants in the BWS Source Water (Serving Manana Housing)

Table 1-2

Contaminants (units)	MCL (Allowed)	MCLG (Goal) ²	Highest Average Level Detected	Range of Detection	Year of Sample	Typical Sources of Contaminants	Violation
Regulated Contaminants							
1,2,3-Trichloropropane (ppb)	0.6	0	0.037	nd – 0.051	2023	Fumigant previously used in agriculture	No
Barium (ppm)	2	2	0.004	0.003 – 0.004	2023	Erosion of natural deposits	No
Chromium (ppb)	100	100	0.975	nd – 1.200	2022	Naturally-occurring	No
Fluoride (ppm)	4	4	0.065	0.055 – 0.065	2023	Erosion of natural deposits; Water additive which promotes strong teeth	No
Nitrate (ppm)	10	10	0.810	0.640 – 0.810	2023	Runoff from fertilizer use; Erosion of natural deposits	No
Unregulated Contaminants^{3,7}							
Chlorate ⁷ (ppb)	210	n/a	30.000	29.000 – 30.000	2023	Byproduct of the disinfection process	n/a
Chloride (ppm)	250 ⁴	n/a	65.000	38.000 – 65.000	2023	Naturally-occurring	n/a
Chromium, hexavalent ⁷ (ppb)	13.000	n/a	1.300	1.200 – 1.300	2023	Naturally-occurring	n/a
Dieldrin (ppb)	0.200	n/a	0.006	nd – 0.012	2023	Residue of banned pesticide	n/a
Sodium (ppm)	60.000	n/a	37.000	29.000 – 37.000	2023	Naturally-occurring	n/a
Strontium ⁷ (ppb)	4000.000	n/a	81.000	62.000 – 81.000	2022	Naturally-occurring	n/a
Sulfate (ppm)	250 ⁴	n/a	13.000	8.800 – 13.000	2023	Naturally-occurring	n/a
Vanadium ⁷ (ppb)	21.000	n/a	10.000	9.300 – 10.000	2022	Naturally-occurring	n/a

Contaminants in the Distribution System

Table 1-3

Contaminants (units)	MCL (Allowed)	MCLG (Goal)	Highest Level Detected	Range of Detection	Year of Sample	Typical Sources of Contaminants	Violation
Copper (ppm)	AL = 1.3	1.3	0.179 ⁵	nd – 0.179	2023	Corrosion of household plumbing systems; Erosion of natural deposits	No
Fluoride (ppm)	4	4	0.89	0.15 – 0.89	2023	Erosion of natural deposits; Water additive which promotes strong teeth	No

Disinfection Agent

Table 1-4

Contaminants (units)	MRDL (Allowed)	MRDLG (Goal)	Highest Average Level Detected	Range of Detection	Year of Sample	Typical Sources of Contaminants	Violation
Residual Chlorine (ppm)	4	4	0.54 ⁶	0.48 – 0.54	2023	Water additive used to control microbes	No

Disinfection Byproducts

Table 1-5

Contaminants (units)	MCL (Allowed)	MCLG (Goal)	Highest Level Detected	Range of Detection	Year of Sample	Typical Sources of Contaminants	Violation
TTHM (ppb)	80	n/a	1.5	nd – 1.5	2023 ²	Byproduct of drinking water disinfection	No

As previously described on page 2, after the November 20, 2021 fuel release and issuance of the DOH Health Advisory, extensive testing was conducted to initially determine the level of contamination present, and later to confirm that system flushing was effective. Table 1-6 list the detected contaminant levels below and after flushing and/or addition corrective actions were applied.

Contaminant Detections in Distribution System/Residences During Drinking Water Long-Term Monitoring Plan **Table 1-6**

Table Contaminants (units)	MCL (Allowed)	Highest Contaminant Level Detected	Year of Sample	Contaminant Level After Corrective
Antimony (ppb)	6	1.2	2023	Below MCL
Barium (ppm)	2	0.0097	2023	Below MCL
Chromium (ppb)	100	7.50	2023	Below MCL
Copper (ppm)	AL = 1.3	0.729	2023	Below MCL
Lead (ppb)	AL = 15	59	2023	Location was flushed and resampled. The resample was 0.13 and below AL.
Selenium (ppb)	50	4	2023	Below MCL
Mercury (ppb)	2	0.120	2023	Below MCL
Total Trihalomethanes (ppb)	80	9.51	2023	Below MCL
Total Petroleum Hydrocarbons	ISP= 266 ISP	132	2023	Below MCL
Total Petroleum Hydrocarbons (gasoline) (ppb)	ISP= 266 ISP	68.5	2023	Below MCL
Total Petroleum Hydrocarbons (oil) (ppb)	ISP= 266 ISP	124	2023	Below MCL

Table Definitions:

- AL** **Action Level.** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- DOH** **Department of Health.**
- EAL** **Environmental Action Level.** Environmental Action Levels are concentrations of contaminants in drinking water and other media (e.g., soil, soil gas, and groundwater) below which the contaminants are assumed to not pose a significant threat to human health or the environment. Exceeding the EAL does not necessarily indicate that contamination at the site poses environmental hazards but generally warrants additional investigation.
- ISP** **Incident Specific Parameter.** The Hawaii DOH uses multiple criteria to assess the safety of the drinking water including maximum contaminant levels (MCLs), previously established action levels (ALs), health advisory levels (HALs), and incident specific parameters (ISPs).
- J** Estimated Value
- MCL** **Maximum Contaminant Level.** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- MCLG** **Maximum Contaminant Level Goal.** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- MRDL** **Maximum Residual Disinfectant Level.** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- MRDLG** **Maximum Residual Disinfectant Level Goal.** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

Table Abbreviations:

- n/a** not applicable. **ppb** parts per billion or micrograms per liter. **ppt** parts per trillion or nanograms per liter.
- nd** not detectable at testing limits. **ppm** parts per million or milligrams per liter.

Table Notes:

1. Only one sample collected.
2. The State and EPA require us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. The date of the last sample collected is as indicated.
3. These results are for informational purposes. There are no set standards. EPA will use this data to help determine where certain contaminants occur and whether it needs to regulate these contaminants. At this time, these contaminants do not have MCLs or MCLGs.
4. These are Secondary Maximum Contaminant Levels not enforced by EPA.
5. Per the Lead and Copper Rule, results are measured as 90th percentile value of samples collected.
6. After each quarter, a running average is calculated using the preceding 12 months of data. This value is the highest running average for the year.
7. National Secondary Drinking Water Regulations (NSDWRs), or secondary standards, are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply with the standard.

Note: Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline 1-800-426-4791.

PFAS Testing

What are per- and polyfluoroalkyl substances and where do they come from?

Per- and polyfluoroalkyl substances (PFAS) are a group of thousands of man-made chemicals. PFAS have been used in a variety of industries and consumer products around the globe, including in the U.S., since the 1940s. PFAS have been used to make coatings and products that are used as oil and water repellents for carpets, clothing, paper packaging for food, and cookware. They are also contained in some foams (aqueous film-forming foam or AFFF) currently used for fighting petroleum fires at airfields and in industrial fire suppression processes. PFAS chemicals are persistent in the environment and some are persistent in the human body – meaning they do not break down and they can accumulate over time.

Is there a regulation for PFAS in drinking water?

On April 10, 2024, the US EPA established MCLs for a subset of PFAS chemicals.

Compound (ppt)	MCL (Allowed)	MCLG (Goal)
PFOA	4.0	0
PFOS	4.0	0
PFHxS	10	10
PFNA	10	10
HFPO-DA (commonly known as GenX Chemicals)	10	10
Mixtures containing two or more of PFHxS, PFNA, HFPO-DA, and PFBS	1 HA	1 HA

EPA requires implementation of sampling in accordance with the new MCLs within three years of the publication date and implementation of any required treatment within five years.

These limits did not apply for the 2023 calendar year because they had not been published. However, the DoD proactively promulgated policies to monitor drinking water for PFAS at all service owned and operated water systems at a minimum of every two years. The DoD policy states that if water sampling results confirm that drinking water contains PFOA and PFOS at individual or combined concentrations greater than the 2016 EPA health advisory (HA) level of 70 ppt, water systems must take immediate action to reduce exposure to PFOS or PFAS. For levels less than 70 ppt but above the 4 ppt level (draft at the time of policy publication), DoD committed to planning for implementation of the levels once EPA's published MCLs take effect.

Has the JBPHH Water System tested its water for PFAS in 2023?

Yes. In April and October 2023, samples were taken from JBPHH's Waiawa Well Shaft.

Below MRL

We are pleased to report that drinking water testing results were below the Method Reporting Limit (MRL) for all 29 PFAS compounds covered by the sampling method, including PFOA and PFOS. This means that PFAS were not detected in your water system as shown in Table 1-1. In accordance with DoD policy, the water system will be resampled every two years for your continued protection.